



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/559,849	12/07/2005	Miki Wolf	1318MMG-US	1965

7590 04/25/2008  
David Klein  
Dekel Patent Beit Harofim  
Room 27  
18 Menuha VeNahala Street  
Rehovot Israel,  
ISRAEL

EXAMINER
----------

RUTLAND WALLIS, MICHAEL

ART UNIT	PAPER NUMBER
----------	--------------

2836

MAIL DATE	DELIVERY MODE
-----------	---------------

04/25/2008

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/559,849	<b>Applicant(s)</b> WOLF ET AL.	
	<b>Examiner</b> MICHAEL RUTLAND WALLIS	<b>Art Unit</b> 2836	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 13 March 2008.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-4 and 6-16 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-4, 6-16 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 19 January 2007 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## DETAILED ACTION

### *Response to Arguments*

Applicant's arguments filed 03/13/08 have been fully considered but they are not persuasive.

Applicant with respect to the 112 rejections cites components may be realized in one of two forms: lumped components or distributed components. Applicant cites it is clear (from the drawings) to anyone skilled in the art that the real components of the circuit diagrams are lumped, since no marking to the contrary is present.

In response, lumped and distributed are typically considered means of analyzing or modeling electronic circuits, reliance upon only drawings to support the conclusion the circuitry of claims 13 and 14 are clearly understood as lumped to anyone skilled in the art, is improper. Applicant has not conveyed to one skilled in the relevant art that the inventors, at the time the application was filed, had possession of the newly added subject matter.

Applicant with respect to claim 1 argues the connection as stated in the previous rejection is not found in Fig. 4 as suggested by the examiner. Applicant cites it is contrary to the accepted practice in the art that *connected* can be broadly interpreted to mean *indirectly connected*. Applicant cites there is no basis for such an interpretation in the MPEP.

In response, Applicant is directed the relevant section of the MPEP regarding claim interpretation (reproduced below in relevant part)

MPEP 2111 [R-5] Claim Interpretation; Broadest Reasonable Interpretation

During patent examination, the pending claims must be “given their broadest reasonable interpretation consistent with the specification.” >The Federal Circuit’s en banc decision in *Phillips v. AWH Corp.*, 415 F.3d 1303, 75 USPQ2d 1321 (Fed. Cir. 2005) expressly recognized that the USPTO employs the “broadest reasonable interpretation” standard

Applicant always has the opportunity to amend the claims during prosecution, and broad interpretation by the examiner reduces the possibility that the claim, once issued, will be interpreted more broadly than is justified. *In re Prater*, 415 F.2d 1393, 1404-05, 162 USPQ 541, 550-51 (CCPA 1969)

Applicant's argument that the references fail to show the connection of applicant's invention, it is noted that the features upon which applicant relies (i.e., a direct connection or directly connected elements/circuitry) are not recited in the rejected claims. Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

With respect to claim 6 Applicant first argues the first capacitor of Cravey cannot be charged through diode 36 because blocking diode 30 is connected inversely to the direction of any potentially flowing current of diode 36.

In response to applicant's argument, it is noted that the features upon which applicant relies (i.e., charging of the first capacitor) are not recited in the rejected claims. Applicant's claim only recites the structural connection of elements.

With respect to claim 6 Applicant secondly argues the capacitors (items 12 and 14) do not function as storage capacitors in the usual sense of retaining the energy for any amount of time and not getting discharged by the physical timing of the different sub- circuits.

In response, as Cravey refers to the capacitors and storage capacitors, one of ordinary skill in the art would find such an interpretation of the capacitors reasonable and consistent with MPEP 2111 [R 5].

In view of the above the rejection is deemed proper and therefore maintained.

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 13 and 14 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claims contain subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventors, at the time the application was filed,

had possession of the claimed invention. There is no basis in Applicant's original disclosure for the limitation contained within claims 13 or 14 "magnetic switch said capacitor are two lumped elements". Applicant cites the limitation in the amended claims is clearly disclosed in the original drawings. The Office, however, finds no indication of the lumping of elements in the original drawings. The only mentioning of a lumping arrangement is found the Weiner reference. Therefore Applicant's added limitations contained within claims 13 and 14 fail to comply with 35 U.S.C. 112, first paragraph.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –  
(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claim 1 is rejected under 35 U.S.C. 102(e) as being anticipated by Cravey (U.S. Pat. No. 6,362,604)

With respect to claim 1 Cravey teaches a high voltage magnetic compression modulator comprising: a low-voltage part (left of transformer, see Fig. 4) comprising an energy source (item 10) connected to a primary winding of a pulsed transformer (item 20); and a high-voltage part (right of transformer, see Fig. 4) comprising a secondary winding of said pulsed transformer connected to a capacitor (item 44), said capacitor being connected to a magnetic switch (item 42), said magnetic switch being connected

to a load (item 24); characterized in that said magnetic switch is distanced separate (see schematic separation of item 42 and 44) from said capacitor and in that a unidirectional low-impedance path (item 102) for the charge of said capacitor is connected in parallel (see for example circuit branch in Fig. 4) to said load, and wherein said low impedance path includes a freewheeling diode (item 36).

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 2-3, 6-14 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cravey (U.S. Pat. No. 6,362,604) in view of von Bergmann (U.S. Pat. No. 6,999,492)

With respect to claims 2-3 Cravey teaches the low voltage part includes a storage capacitor (item 12), however does not teach the further use a fast high-current commutator. Von Bergmann teaches the low-voltage part further comprises a storage capacitor (C1) and a fast high-current commutator (Q1), all connected in series in a loop (Fig. 3) with said primary winding of said pulsed transformer (302), and wherein said energy source comprises a capacitor charger (voltage source). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Cravey to

include a fast high-current commutator in order to control the saturation of the magnetic switch.

With respect to claims 6-7, 9 and 13-14 Cravey teaches a high voltage magnetic compression modulator comprising: a low-voltage part (left of transformer, see Fig. 4) comprising a charger (item 10) with a first terminal connected to a first terminal of a storage capacitor (item 12 or 14), and with a second terminal (ground) connected to a second terminal (lower terminal) of to a first terminal of a low-voltage winding (primary windings) of a pulsed transformer (item 20), the second terminal (upper terminal) of said low-voltage winding being connected to the second terminal of said storage capacitor; and a high-voltage part (right of transformer, see Fig. 4) formed by said high-voltage transformer (item 20) whose secondary winding (right side winding) is connected in parallel (see connection in Fig. 4 for example) to a first capacitor (item 44) and by a first of its terminals to a first terminal of a second capacitor, and by a second of its terminals to a first terminal of a magnetic switch (item 42), a second terminal of the magnetic switch being connected to a first terminal of a load (item 24), a second terminal (ground) of said secondary winding being connected to a second terminal (upper terminal) of said load characterized in that said magnetic switch is distanced separate (see schematic separation of item 42 and 44) from said second capacitor and in that a low-impedance path (item 102) is provided for the charge of said second capacitor through a freewheeling diode (item 36) connected in parallel see for example circuit branch in Fig. 4) to said load. Cravey teaches the low voltage part includes a storage capacitor (item 12), however does not teach the further use a fast high-current commutator. Von



Bergmann teaches the low-voltage part further comprises a storage capacitor (C1) and a fast high-current commutator (Q1), all connected in series in a loop (Fig. 3) with said primary winding of said pulsed transformer (302), and wherein said energy source comprises a capacitor charger (voltage source). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Cravey to include a fast high-current commutator in order to control the saturation of the magnetic switch.

Cravey teaches the use of a pulsed transformer, However does not teach the transformer is wound on a ferromagnetic core. The use of a ferromagnetic core in transformer design is well known means to control flux and reduce magnetizing current. It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Cravey to use a transformer with a ferromagnetic core in order to reduce magnetizing current and better magnetically couple the windings.

With respect to claim 8 Cravey does not teach the first terminal is its negative terminal and said charger second terminal is its positive terminal. It would have been obvious to one of ordinary skill in the art at the time of the invention to modify von Bergmann to reverse the polarity in order to utilize negative voltage and negative logic.

With respect to claim 10 Cravey as modified above teaches the said ferromagnetic core. A detailed discussion relating to the magnetic curve of the core of Weiner is not given typical ferrite core pulse transformer have regular rectangular magnetization curves it would have been obvious to one of ordinary skill in the art at the time of the invention to use such a core in order to increase the efficiency and effectiveness of the transformer.

With respect to claim 11 Cravey teaches a similar pulse forming network to that system disclosed by von Bergmann. Cravey teaches (col. 10 lines 1-10) plural embodiments which may use multiple magnetic switches and compression stages. It would have been obvious to one of ordinary skill in the art at the time of the invention to modify von Bergmann to use multiple stages in order to reach higher voltage levels and rise times.

With respect to claim 12 von Bergmann teaches at least one of said first magnetic switches is implemented (col. 4 lines 55-60) as a high-voltage transformer wound on a ferromagnetic core having a rectangular magnetization curve.

With respect to claim 16 Cravey teaches the magnetic switch is connected in series with said capacitor (see connection in Fig. 4).

Claims 4 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cravey (U.S. Pat. No. 6,362,604)

With respect to claim 4 Cravey teaches the use of a pulsed transformer, however does not teach the transformer is wound on a ferromagnetic core. The use of a ferromagnetic core in transformer design is well known means to control flux and reduce magnetizing current. It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Cravey to use a transformer with a ferromagnetic core in order to reduce magnetizing current and better magnetically couple the windings.

With respect to claim 15 Cravey teaches the magnetic switch is connected in series with said capacitor (see connection in Fig. 4).

***Conclusion***

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael Rutland-Wallis whose telephone number is 571-272-5921. The examiner can normally be reached on Monday-Thursday 7:30AM-6:00PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Sherry can be reached on 571-272-2084. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2836

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Michael J Sherry/  
Supervisory Patent Examiner, Art Unit 2836

MRW